

IN THE US PATENT AND TRADEMARK OFFICE

Application Number: 10/729,582
Reissue of U.S. Patent 6,328,482
Attorney Docket Number AFC-002/RE
Filing Date: December 6, 2003
Applicant: Benjamin B. Jian
Application Title: MULTILAYER OPTICAL FIBER COUPLER
Examiner: Juliana K. Kang
Art Unit: 2874



AFFIDAVIT – RULE 1.132

STATE OF CALIFORNIA)
): SS.

COUNTY OF SANTA CLARA)

I, Benjamin Jian, being duly sworn, depose and say that I am the inventor of the invention as described and claimed in the above-referenced US Patent and reissue application. I am the founder and President of Arrayed Fiberoptics Corporation of Sunnyvale, California, a manufacturer of innovative fiber optic components. Arrayed Fiberoptics is a California Corporation formed in 2000. Arrayed Fiberoptics is the assignee of the above-referenced patent and reissue application. Prior to founding Arrayed Fiberoptics in 2000, I was an engineer at Applied Materials, and at Wavesplitter Technologies, a fiber optic component manufacturer. I have over ten years of industry experience in fiber optic components. I received a Ph.D. in Electrical Engineering from Cornell University where I performed research in optoelectronics and microfabrication. I have published several research papers in peer-reviewed journals and holds several US patents on fiber optic component manufacturing technology, including the first US patent on silicon DRIE etched hole for single mode fiber passive alignment.

**COMMERCIAL SUCCESS OF 2D FIBER ARRAYS WITH FIBER SOCKETS
MANUFACTURED USING DEEP REACTIVE ION ETCHING**

In December, 2004 Arrayed Fiberoptics was contacted by Luescher, AG of Switzerland to provide 2D fiber arrays with fiber sockets manufactured using deep reactive ion etching (DRIE) as set forth in claims 30 and 34 of the present application, for use in computer to plate

(CTP) machines. CTP machines are used for making printing plates in the commercial printing industry. Luescher AG is the 4th or 5th largest manufacturer of such CTP machines in the world.

Luescher's products include EXPOSE! product line of 32- 64- and 128-fiber port CTP machines, which respectively use 4X8 or 8X8 or 16X8 2D fiber arrays. Luescher AG had previously used 2D fiber arrays made by forming holes in a stainless steel plate using electron discharge machining (EDM). Luescher AG found that 2D fiber arrays manufactured in this fashion were not precise enough even for multimode fiber alignment.

After discussions with Arrayed Fiberoptics and review of samples of 2D fiber arrays with DRIE-fiber sockets Luescher found them to be satisfactory. Arrayed Fiberoptics supplied additional batches of 2D fiber arrays with DRIE-fiber sockets to Luescher, which exceeded Luescher's expectations. Luescher entered into a contract to have Arrayed Fiberoptics provide 2D fiber arrays with DRIE-fiber sockets for Luescher's 32-, 64, and 128-port CTP machines. Arrayed Fiberoptics revenues from this contract are projected to be \$550,000 for 2006.

Arrayed Fiberoptics is in early stages of negotiations with another major CTP manufacturer to produce 2D fiber arrays having DRIE-fabricated fiber sockets for their machines.

HISTORY OF EARLY COMMERCIAL USE OF THE INVENTION

On or about June 19, 1998 I entered into a non-disclosure agreement (NDA) with John Bowers regarding fiber socket fabrication and applications, which were the subject of US Patent 6,328,482 and related patents. A copy of the NDA is attached in support of these facts. John Bowers, a professor at the University of California at Santa Barbara, was a technical expert retained by a venture capitalist to evaluate the technology described in US Patent 6,328,482 for funding. John Bowers first learned about the use of DRIE to form fiber sockets as a result of disclosures under this NDA. John Bowers founded Calient Networks, in March 1999 to develop a three-dimensional (3D) massively parallel fiber optic switch. A key enabling component of such a switch is a 2D fiber array. Calient Networks has received

about 280 million dollars in funding to date. Calient Networks is presently the number one manufacturer of three-dimensional massively parallel fiber optic switches in the world.

I have learned from multiple sources not covered by a duty of confidentiality that the 3D parallel fiber switches that Calient manufactures use 2D fiber arrays having DRIE-fabricated sockets.


Benjamin Jian

2/21/2006
Date

State of California)

County of Santa Clara) ss.

On this 21 day of Feb, in the year 2006, before me, PAVNEET SINGH Notary Public, personally appeared Benjamin Jian personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Signature Pavneet Singh (SEAL)

